INDEX TO VOLUME 19

A

AC Thermostat (John Hume), 158.
Acoustic Wave Filters (G. W. Stewart and C. W. Sharp), 17.
ADAMS, JOHN MEAD: Time Measuring by Commercial Alternating Current with Controlled Frequency, 384.
Air Compressor for Small Laboratories (Harry Gilbert and Walter Gilbert), 148.
Air Thermometer (J. E. Shrader), 162.
ALBERS, VERNON M.: A Vacuum Arc, 146.
ALLISON, F., J.W. BEAMS and L. G. HOXTON: An Interferometer Using Plane-Polarized Light, 90.
Aluminum Alloy for Vacuum Chamber Castings (Edgar C. Nichols), 164.
Announcement, Editorial, 416.
Antimony Mirrors on Glass, Electrically Conductive (Standish Miller), 101.
Application of Spark Recording to Experiments in Mechanics (Paul E. Klopsteg), 335.
AtomModel (J. G.Black), 317.

B

BAYNE-JONES, S. and L. V. FOSTER: A Cinematographic Recording Galvanometer, 73.
BEAMS, J. W., L. G. HOXTON and F. ALLISON: An Interferometer Using Plane-Polarized Light, 90.
BLACK, J. G.: A Dynamic Atom Model of the First Eleven Elements of the Periodic Table, 317.
BOECKNER, C.: A Method of Obtaining the the Optical Constants of Metallically Reflecting Substances in the Infrared, 7.
Bridge Grid Resistor Amplifier (Joseph Razek and Peter J. Mulder), 390.
BROWN, THOMAS B.: Electric Current Measurement in Terms of Length, Mass, and Time, 320.
BURNS, KEIVIN: Computing Attachment for Comparators, 250.

C

Caesium-Magnesium Photocell (V. Zworykin and E. D. Wilson), 81.
Cinematographic Recording Galvanometer (S. Bayne-Jones and L. V. Foster), 73.
Comparators, Computing Attachment for (Keivin Burns), 250.
Compton Effect (Russell H. Varian), 351.
Computing Attachment for Comparators (Keivin Burns), 250.
Constant Current Regulator, An Improved (Lewis G. Longsworth and Duncan A. MacInnes), 50.
Continuous Spectrum in Mercury (W. H. Crew and W. N. Thornton), 358.
CREW, W. H. and W. N. THORNTON: Bands of Continuous Spectrum in Mercury, 358.
Curves, the Design of Drawing (P. G. Nutting), 29.

D

Design of Drawing Curves (P. G. Nutting), 29.
Dolezalek Type Electrometer, A method of Increasing the Sensibility of the; and a Direct Reading "Null" Circuit (John M. Pearson), 371.
Dynamic Atom Model of the First Eleven Elements of the Periodic Table (J. G. Black), 317.

E

Editorial Announcement, 416.
Electric Current Measurement in Terms of Length, Mass, and Time (Thomas B. Brown), 320.
Electric "Stopwatch" (Paul E. Klopsteg), 345.
Electrically Conductive Antimony Mirrors on Glass (Standish Miller), 101.
Electromagnetic Induction, A new Variable Standard of (Paul E. Klopsteg), 367.
Emission from Oxide Coated Filaments (Vernon C. Macnabb), 33.
EVERITT, W. L.: Mechanical and Electrical Demonstration of Relations between Standing and Traveling Waves, 95.

F

FORBES, W. T. M.: The Purkinje Phenomenon: Quantitatively Considered, 69.
FOSTER, D. V. and S. BAYNE-JONES: A Cinematographic Recording Galvanometer, 73.

G

Galvanometers, An Adjustable Mounting for (B. J. Smyth and L. W. Taylor), 93.
Gas-Filled X-Ray Tube of Small Diameter and Large Power Capacity (Russell H. Varian), 404.
GILBERT, HARRY and WALTER GILBERT: Air Compressor for Small Laboratories, 148.
GILBERT, WALTER and HARRY GILBERT: Air Compressor for Small Laboratories, 148.
GODDARD, R. H.: On the Efficient Utilization of Solar Energy, 42.
Greenwood, Gilbert: An Automatic Cooling System for the Hadding-Siegbahn X-Ray Tube, 150.

H

HARRISON, GEORGE R.: Instruments and Methods Used for Measuring Spectral Light Intensities by Photography, 267.

HARRISON, GEORGE R.: Intensity Relations in the Spectra of Titanium-III. Intensities in Super-Multiplets of Ti I, 109.

HAWORTH, F. E.: A Voltage Regulator for Gas Discharge X-Ray Tubes, 79.

HICKMAN, K. C. D.: The Mercury Meniscus, 190.

High Vacuum Technique,—Experimental Study of Effect of Ionization on Pump Speeds (Chas. T. Knipp and P. C. Ludolph), 152.

HOWE, HARRISON E.: The Value of the Scientific Instrument Industry to the Life of the Country, 187.

HOXTON, L. G., F. ALLISON and J. W. BEAMS: An Interferometer Using Plane-Polarized Light, 90.

HUME, JOHN: A Thermostat to work off AC Mains, 158.

I

Impedance Bridge, A Vacuum Tube (G. A. Stone), 326.

Improved Wilson Cloud Apparatus (Gordon L. Locher), 58.

Impulse Counter, Tallying Device and Electric "Stopwatch"—A Useful Laboratory Instrument (Paul E. Klopsteg), 345.

Instruments and Methods used for Measuring Spectral Light Intensities by Photography (George R. Harrison), 267.

Intensity Measurements on the Compton Effect for Soft X-Rays (Russell H. Varian), 351.

Intensity Relations in the Spectra of Titanium-III. Intensities in Super-Multiplets of Ti I (George R. Harrison) 109.

Interferometer Using Plane-Polarized Light (J. W. Beams, L. G. Hoxton, and F. Allison), 90.

K

KARAPETOFF, VLADIMIR: Relativity Transformation of an Oscillation into a Traveling Wave, and De Broglie's Postulate in Terms of Velocity Angle, 253.

KELSALL, G. A.: Magnetic Testing Furnace for Toroidal Cores, 47.

KLOPSTEG, PAUL E.: A New Variable Standard of Electromagnetic Induction, 367.

KLOPSTEG, PAUL E.: An Impulse Counter, Tallying Device and Electric "Stopwatch"—A Useful Labratory Instrument, 345.

KLOPSTEG, PAUL E.: The Application of Spark Recording to Experiments in Mechanics, 335.

KNIPP, CHAS. T. and P. C. LUDOLPH: High Vacuum Technique,—Experimental Study of Effect of Ionization on Pump Speeds, 152.

KOLLER, LEWIS R.: Some Characteristics of Photoelectric Tubes, 135.

KURTZ, HENRY F.: A New Quartz Spectrograph 378.

L

LOCHER, GORDON L.: A Large Reciprocating C. T. R. Wilson Could Expansion Apparatus, 58.

LONGSWORTH, LEWIS G. and DUNCAN A. MACINNES: An Improved Constant Current Regulator, 50.

LUBOVICH, VLADIMIR P. and MARGARET MCC. MALTBIE: Transmission in the Ultraviolet of Paraffin Coated Cloth, 411.

LUCKIESH, M.: Spectral Reflectances of Common Materials in the Ultraviolet Region, 1.

LUDOLPH, P. C. and CHAS. T. KNIPP: High Vacuum Technique,—Experimental Study of Effect of Ionization on Pump Speeds, 152.

M

MACINNES, DUNCAN A. and LEWIS G. LONGSWORTH: An Improved Constant Current Regulator, 50.

MACNABB, VERNON C.: The Production of Emission from Oxide Coated Filaments: a Process Phenomenon, 33.

Magnetic Quantities, The Measurement of (L. W. McKeehan), 213.

Magnetic Testing Furnace for Toroidal Cores (G. A. Kelsall), 47.

MALTBIE, MARGARET MCC. and VLADIMIR P. LUBOVICH: Transmission in the Ultraviolet of Paraffin Coated Cloth, 411.

MCKEEHAN, L. W.: The Measurement of Magnetic Quantities, 213.

MCLEOD GAUGE: A Pressure Controlled (Newton Underwood), 78.

Measurement of Magnetic Quantities (L. W. McKeehan), 213.

Mechanical and Electrical Demonstration between Standing and Traveling Waves (W. L. Everitt), 95.

Mercury Arc with Thin Glass Window (Simon Sonkin), 65.

Mercury, Bands of Continuous Spectrum in (W. H. Crew and W. N. Thornton), 358.

Mercury Meniscus (K. C. D. Hickman), 190.

Metallically Reflecting Substances in the Infrared, a Method of Obtaining the Optical Constants of (C. Boeckner), 7.

Mid-Series Characteristics of Acoustic Wave Filters, Experimental and Theoretical (G. W. Stewart and C. W. Sharp), 17.

MILLER, STANDISH: Electrically Conductive Antimony Mirrors on Glass, 101.

Mounting for Wall Galvanometers (B. J. Smyth and L.W.Taylor), 93.
MULDER, PETER J. and JOSEPH RAZEK: A Bridge Grid Resistor Amplifier, 390.

N

New Photometer Head (A. H. Pfund), 387.
NICHOLS, EDGAR C.: A Non-Porous Aluminum Alloy for Vacuum Chamber Castings, 164.
Non-Porous Aluminum Alloy for Vacuum Chambers (Edgar C. Nichols), 164.
Notes, Willmer Ophthalmological Institute, 133.
Notice, Annual Meeting of the Scientific Apparatus Makers of America, 71.
Notice, Optical Society of America, 134.
"Null" Circuit, A Direct Reading; and a Method of Increasing the Sensibility of the Dolezalek Type Electrometer (John M. Pearson), 371.
NUTTING, P. G.: The Design of Drawing Curves, 29.

O

Optical Constants in the Infrared (C. Boeckner), 7.
Optical Society of America, Notice of Change of Secretary, 134.
Oxide Coated Filaments, the Production of Emission from (Vernon C. Macnabb), 33.

P

Paraffin Coated Cloth, Transmission in the Ultraviolet of (Vladimir P. Lubovich and Margaret McC. Maltbie), 411.
PEARSON, JOHN M.: A Method of Increasing the Sensibility of the Dolezalek Type Electrometer; and a Direct Reading "Null" Circuit, 371.
PFUND, A. H.: A New Photometer Head, 387.
Photocell, The Caesium-Magnesium (V. Zworykin and E. D. Wilson), 81.
Photoelectric Tubes, Some Characteristics of (Lewis R. Koller), 135.
Photographic Photometry (George R. Harrison), 267.
Photometer Head, A New (A. H. Pfund), 387.
Prism with an Index of Refraction Less than Unity (H. E. Stauss), 167.
Purkinje Phenomenon: Quantitatively Considered (W. T. M. Forbes), 69.

Q

Quartz Spectrograph, A New (Henry F. Kurtz), 378.

R

RAZEK, JOSEPH and PETER J. MULDER: A Bridge Grid Resistor Amplifier, 390.
Recording Galvanometer (S. Bayne-Jones and L. V. Foster), 73.
Reflectances in the Ultraviolet (M. Luckiesh) 1.
REICH, H. J. and L. C. VERMAN: A Vacuum Tube Voltage Regulator for Large Power Units, 243.
Relativity Transformation of an Oscillation into a Traveling Wave, and De Broglie's Postulate in Terms of Velocity Angle (Vladimir Karapetoff), 253.
Reviews:
CABANNES, JEAN: La Diffusion Molèculaire de la Lumiére Dans les Fluides, 266.
COWAN, ALFRED: An Introductory Course in Ophthalmic Optics, 16.
DINGLER, HUGO: Das Experiment; sein Wesen und seine Geschichte, 408.
FITCH, A. L: Fundamentals of Physics, 28.
FLETCHER, HARVEY: Speech and Hearing, 68.
FÖRSTERLING, KARL: Lehrbuch der Optik, 105.
Handbuch der Experimentalphysik, Vol. XVIII, 57.
Handbuch Der Physik, Vol. XX: Licht als Wellenbewegung,49.
JOHNSON, R. C.: "Spectra," 265.
LADD-FRANKLIN, CHRISTINE: Colour and Colour Theories, 103.
LOCKYER, T. MARY, WINIFRED L. LOCKYER and PROF. H. DINGLE: Life and Work of Sir Norman Lockyer, 165.
RAWLINS, F. I. G. and A. M. TAYLOR. Infrared Analysis of Molecular Structure. 32.
SHELDON, H. HORTON: Television, 350.
WAGNER, ALBERT F.: Experimental Optics, 189.
RICHTMYER F. K.: The Annual Meeting of the Scientific Apparatus Makers of America, 71.

S

Scientific Apparatus Makers of America, Annual Meeting (F. K. Richtmyer), 71.
Scientific Instrument Industry (Harrison E. Howe), 187.
SHARP, C. W. and G. W. STEWART: Experimental and Theoretical Mid-Series Characteristic Impedance of Acoustic Wave Filters, 17.
SHRADER, J. E.: A Simple Air Thermometer, 162.
SIMON, A. W.: A Note on a Static Machine with Pyrex Insulation, 407.
SLATTERY, MABEL K.: Uranium as an Activator-II, 175.
SMYTH, B. J. and L. W. TAYLOR: An Adjustable Mounting for Wall Galvanometers, 93.
Solar Energy, on the Efficient Utilization of (R. H. Goddard), 42.
SONKIN, SIMON: A Mercury Arc with Thin Glass Window, 65.

Spark Recording (Paul E. Klopsteg), 335.
Spectral Light Intensities, Instruments and Methods used for Measuring (George R. Harrison), 267.
Spectral Reflectances of Common Materials in the Ultraviolet Region (M. Luckiesh), 1.
Spectrograph, A New Quartz (Henry F. Kurtz.) 378.
Static Machine with Pyrex Insulation (A. W. Simon), 407.
STAUSS, H. E.: The Prism with an Index of Refraction Less than Unity, 167.
STEWART, G. W. and C. W. SHARP: Experimental and Theoretical Mid-Series Characteristic Impedance of Acoustic Wave Filters, 17.
STONE, G. A.: A Vacuum Tube Impedance Bridge, 326.
Super Multiplet Intensities (George R. Harrison), 109.

T

Tallying Device (Paul E. Klopsteg), 345.
TAYLOR, A. M. and F. I. G. RAWLINS: Infrared Analysis of Molecular Structure, 32.
TAYLOR, L. W. and B. J. SMYTH: An Adjustable Mounting for Wall Galvanometers, 93.
Thermometer, A Simple Air (J. E. Shrader) 162.
Thermostat to work off AC Mains (John Hume), 158.
THORNTON, W. N. and W. H. CREW: Bands of Continuous Spectrum in Mercury, 358.
Time Measuring by Commercial Alternating Current with Controlled Frequency (John Mead Adams), 384.
Titanium Spectra (George R. Harrison), 109.
Toroidal Cores, Magnetic Testing Furnace for (G. A. Kelsall), 47.
Transformation of Oscillations (Vladimir Karapetoff), 253.
Transmission in the Ultraviolet of Paraffin Coated Cloth (Vladimir P. Lubovich and Margaret McC. Maltbie, 411.

U

Ultraviolet Transmission of Paraffin Coated Cloth (Vladimir P. Lubovich and Margaret McC. Maltbie), 411.
UNDERWOOD, NEWTON: A Pressure Controlled McLeod Gauge, 78.
Uranium as an Activator-II (Mabel K. Slattery) 175.
Utilization of Solar Energy (R. H. Goddard), 42.

V

Vacuum Arc (Vernon M. Albers), 146
Vacuum Tube Impedance Bridge (G A. Stone), 326.
Vacuum Tube Voltage Regulator for Large Power Units (L. C. Verman and H. J. Reich), 243.
Value of the Scientific Instrument Industry to the Life of the Country (Harrison E. Howe), 187.
Variable Standard of Electromagnetic Induction (Paul E. Klopsteg), 367.
VARIAN, RUSSELL H.: A Gas-Filled X-Ray Tube of Small Diameter and Large Power Capacity, 404.
VARIAN, RUSSELL H.: Intensity Measurements on the Compton Effect for Soft X-Rays, 351.
VERMAN, L. C. and H. J. REICH: A Vacuum Tube Voltage Regulator for Large Power Units, 243.
Voltage Regulator for Gas Discharge X-Ray Tubes (F. E. Haworth), 79.
Voltage Regulator for Large Power Units, A Vacuum Tube (L. C. Verman and H. J. Reich), 243.

W

Wave Models (W. L. Everitt), 95.
Wilson Cloud Expansion Apparatus (Gordon L. Locher), 58.
WILSON, E. D. and V. ZWORYKIN: The Caesium-Magnesium Photocell, 81.

X

X-Ray Tube Cooling System (Gilbert Greenwood), 150.
X-Ray Tube of small Diameter and Large Power Capacity (Russell H. Varian), 404.
X-Ray Tubes, A Voltage Regulator for Gas Discharge (F. E. Haworth), 79.

Z

ZWORYKIN, V. and E. D. WILSON: The Caesium-Magnesium Photocell, 81.